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EXAMINER	
WERNER, DAVID N	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/705,938	ISHII, YOSHIKI	
	Examiner	Art Unit	
	David N. Werner	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-7,10-17 and 26-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-7,10-17 and 26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20090428*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action for U.S. Patent Application 10/705,938 is responsive to communications filed 04 May 2009, in reply to the telephonic interview of 28 April 2009 and the non-final rejection of 03 February 2009. Currently, Claims 1, 4–7, 10–17, and 26–30 are pending. Of those, Claims 10–14 have been withdrawn from consideration.

2. In the previous Office action, Claims 1, 7, 15, 17, and 26–30 were rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent 5,987,179 A (Riek et al.). Claims 4–6 and 16 were rejected under 35 U.S.C. 103(a) as obvious over Riek et al. in view of Japanese Patent Application Publication 2000-050263 A (Asada et al.).

Information Disclosure Statement

3. The information disclosure statement filed 28 April 2009 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. Applicant states that the concise explanation of relevance of the JPO Office action for corresponding application JP 2005-307143 "is found in the attached English-language Abstracts" of the document cited therein. However, while the abstract provides an explanation of relevance for WO 02/087232, it does not demonstrate how the JPO believes the teachings of this

document relate to the claims of the current application. A full translation of the Japanese Office action is required for this to be considered.

Election/Restrictions

4. In the interview of 28 April 2009, it was mutually agreed that the previous restriction of the claimed invention into three species was improper. Pursuant to the procedures set forth in MPEP § 821.04, Claims 10–14, directed to the process of making or using an allowable product, previously withdrawn from consideration as a result of a restriction requirement, are hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Because all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, **the restriction requirement as set forth in the Office action mailed on 13 April 2007 is hereby withdrawn**. In view of the withdrawal of the restriction requirement as to the rejoined inventions, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Response to Arguments

5. Applicant's arguments, see pages 13–16, filed 04 May 2009, with respect to the rejection(s) of claim(s) 1, 15, and 28 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent 4,546,390 (Konishi et al.). Konishi et al. discloses a combination moving image/still image camera that records moving image data at a lower resolution than still image data, and so the control element in the Konishi et al. camera that switches resolution is the claimed "resolution control circuit" that converts resolution for motion image data and not still image data.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,987,179 A (Riek et al.) in view of U.S. Patent 4,546,390 (Konishi et al.). Riek et al. discloses a camera that encodes still images in an MPEG bitstream. Regarding claim 1, figure 2 illustrates an embodiment of the Riek et al. apparatus. Light is input through lens 12 to CCD 14, which forms images (column 4: lines 15–18). These images are converted to a standard digital format in ISO CCIR601 converter 27 (column

4: lines 35–38). Then, converter 27 is the claimed "input unit". As will be shown below, the images received may be encoded as still images or moving images. A user may switch from recording motion images to recording still images with still select button 22 which causes logic and control unit 32 to encode a still image (column 4: lines 41–50). Then, still select button 22 is the claimed "control-signal receiving unit", that receives a manually-entered signal (depressing the button) to indicate still image recording, and logic and control unit 32 is the claimed "still-image-recording control circuit". During a still image mode, a still image stored in frame store 29 from converter 27 is selected for encoding (column 4: lines 41–46). Then, frame store 29 is the claimed "still-image-data memory unit". Input selector 28 determines, in response to a signal from logic and control circuit 32, whether to input data directly from converter 27 in case of a motion image mode or frame store 29 in case of a still image mode (column 4: lines 43–50), and so is the claimed "circuit having a switch". MPEG encoder 30 receives a quantization parameter MQUANT to encode images (column 4: lines 51–60), and so, like all other MPEG encoders, has a "quantization unit". Control circuit 32 adjusts the value of MQUANT to create enhanced images if a still image mode is selected (column 4: lines 51–60) by reducing MQUANT to a smaller value or range (column 4: line 61–column 5: line 38). Then, logic and control circuit 32 is the claimed "quantization unit". Encoder 30, which may encode a still image as a series of zero-motion-vector B frames or an enhanced P frame followed by a series of B frames, and encoding the first frame at the conclusion of recording the still image as the next I frame (column 9: line 22–

column 10: line 41), is the claimed "encoding unit" that performs the claimed encoding method.

The present invention differs from Riek et al. in that in the present invention, the received motion image data is converted to a different resolution, whereas the Riek et al. camera does not disclose this feature.

Konishi et al. teaches a combination still and motion image camera. Regarding claim 1, in Konishi et al., based on an input from a mode change-over switch, control unit 107 produces control signals for operating in still mode or movie mode (column 3: lines 61–63). Included in this is a signal that directs sensor unit 104 to produce still images at a slow scan rate and high quality with fine quantization and full resolution or movie images at a high scan rate and reduced quality with coarser quantization and reduced resolution (column 3: lines 25–48). In the still mode, the data pulses from every element in sensor grid 100 is held in buffer 204 and released into still quantizer 206, but in movie mode, only the data from a select number of sensor elements are released into movie quantizer 207 (column 6: lines 1–12). Then, control unit 107, shown in figure 2 to output control signal X4 which selects the still image circuit path or movie image circuit path in mode select unit 106, is the claimed "resolution converting circuit" that converts received motion image data, here the waveform of data from the sensor, but not received still image data.

Riek et al. discloses the claimed invention except for changing resolution of a moving image. Konishi et al. teaches that it was known to reduce the resolution of incoming images in a movie mode. Therefore, it would have been obvious to one

having ordinary skill in the art at the time of the present invention to modify the Riek et al. system to record moving images at a lower resolution than still images, as taught by Konishi et al., since Konishi et al. states in column 2: lines 1–44 that such a modification would reduce the amount of bandwidth needed to record a series of moving pictures to a level comparable to that of a single high-quality still picture.

Regarding Claim 7, in Riek et al., enhancement pictures in a still image mode may be encoded with zero motion vectors by disabling the motion estimation module (column 7: lines 22–27; column 9: lines 14–17).

Regarding Independent Claim 10, in Konishi et al., still image sample hold 204 which stores still image data according to a sample hold pulse frequency (column 4: lin3 67–column 5: line 6) is the claimed "memory" that stores still image data for a predetermined time period. In Riek et al., encoder 30, which may encode a still image as a series of zero-motion-vector B frames or an enhanced P frame followed by a series of B frames, and encoding the first frame at the conclusion of recording the still image as the next I frame (column 9: line 22–column 10: line 41), is the claimed "compression means".

Regarding Claim 11, the encoder of Riek et al. may be set to encode the first frame in a still image sequence as an I picture (column 6: lines 36–46).

Regarding Claim 12, in Riek et al., the TM5 MPEG-2 encoder which performs motion compensation (column 10 lines 60–61) is the claimed motion compensation prediction means that performs frame inter-coding prediction.

Regarding Independent Claim 13, in Konishi et al., control switch 201 or 203 which activates the still mode encoding pictures at full resolution or move mode encoding pictures at reduced resolution (column 4: lines 8–9) is the claimed "resolution converting means". Still image sample hold 204 is the claimed "memory". Encoder 30 of Riek et al. is the claimed "compressing means". Controller 107 of Konishi et al. which selects the movie mode or still mode is the claimed "control means".

Regarding Claim 14, in Riek et al., enhancement pictures in a still image mode may be encoded with zero motion vectors by disabling the motion estimation module (column 7: lines 22–27; column 9: lines 14–17).

Regarding Independent Claim 15, all other components being equal to those described in independent Claim 1, in Riek et al., MQUANT is normally allowed to vary between 1 and 31 (column 5: line 4), and is selected at the macroblock level based on a TM5 rate control operation (column 6: line 53–column 7: line 5). This is the "variable quantization characteristic value". However, when a still image is encoded, a selected MQUANT value is used "for all the macroblocks" (column 4: lines 58–60). This is the claimed "constant quantization characteristic value". Then, logic and control circuit 32

that fixes quantization characteristic value MQUANT for each picture during a still image mode is the claimed "control unit".

Regarding Claim 17, in Riek et al., enhancement pictures in a still image mode may be encoded with zero motion vectors by disabling the motion estimation module (column 7: lines 22–27; column 9: lines 14–17).

Regarding Claim 26, in Riek et al., storage device 26 that stores compressed motion images and still images (column 4: lines 28–34) is the claimed "recording medium".

Regarding Claim 27, in Riek et al., storage device 26 that stores compressed motion images and still images (column 4: lines 28–34) is the claimed "recording medium".

Regarding Independent Claim 28, all other components being equal to those described in independent Claim 1, in Riek et al., logic and control circuit 32 selects a single value of MQUANT "for all the macroblocks" in a still image (column 4: lines 54–60). Then, logic and control circuit 32 that fixes quantization characteristic value MQUANT for each picture during a still image mode is the claimed "control unit".

Regarding Claim 29, in Riek et al., enhancement pictures in a still image mode may be encoded with zero motion vectors by disabling the motion estimation module (column 7: lines 22–27; column 9: lines 14–17).

Regarding Claim 30, in Riek et al., storage device 26 that stores compressed motion images and still images (column 4: lines 28–34) is the claimed "recording medium".

8. Claims 4–6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riek et al. in view of Konishi et al. as applied to Claims 1 and 15 above, and further in view of Japanese Patent Application Publication 2000-050263 A (Asada et al.). Claim 4 is directed to performing quantization based on the product of a quantization matrix and a characteristic value, and claim 16 is directed to storing a quantization characteristic value in a memory. Riek et al. discloses selecting a value of quantization parameter MQUANT for a still image (column 4: line 51–column 5: line 56) but does not describe this as the used with a quantization matrix.

Asada et al. teaches a digital camera that can encode or decode both motion images and still images (abstract), in which the quantization unit for motion images and still images is shared (paragraphs 0040-0044). Regarding claim 4, figure 7 of Asada et al. shows the quantizer. The quantization Q for each DCT value in a block is given by the formula $Q = \frac{16 \times D_{(i,j)}}{Qs \times W_{(i,j)}}$, where D is the DCT coefficient for frequency (i,j), Qs is the quantization characteristic, and W is the value in a quantization matrix for frequency (i,j) (paragraph 0041). Regarding claim 5, in Asada et al., Qs controls the number of "generating signs", or non-zero quantization values. As shown in Riek et al., it was known in the art that adjusting a quantization step size, such as quantization parameter

MQUANT, changes the quality of a compressed image. Since Qs is in the denominator of the value of the formula for quantized value Q, a smaller value of Qs yields a higher value of Q, particularly in higher-frequency AC DCT values, and increasing the quality of the compressed image. Note that the phrase "dosage child-ized table" throughout the machine translation of Asada et al., provided with the Non-Final Rejection of 13 April 2007, is a mistranslation of the phrase「量子化」which should read "quantization", and has no meaning regarding quantization step size.

Regarding claim 6, in Asada et al., motion image processing and still image processing use different quantization tables. Figure 10 shows an embodiment of Asada et al. in which two quantization tables are stored in a memory (paragraph 0045). In motion processing, field A stores an Intra quantization table, and field B stores an Inter quantization table. In still image processing, field A stores a Luminance quantization table, and field B stores a Chrominance quantization table (paragraph 0048).

Regarding claim 16, in Asada et al., the quantization tables for still image coding and motion image coding are stored in a memory (paragraph 0048).

Riek et al., in combination with Konishi et al., discloses the claimed invention except for quantizing motion images and still images based on quantization tables. Asada et al. teaches that it was known to vary the quantization parameters according to pre-defined tables for still images and motion images. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the quantization method of Asada et al. into the encoder of Riek et al., since

Asada states in paragraph 0050 that such a modification would reduce the time to switch between motion image encoding and still image encoding.

Conclusion

9. This Office action is non-final due to the first examination of rejoined Claims 10–15 on the merits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Werner whose telephone number is (571)272-9662. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. N. W./
Examiner, Art Unit 2621

/Andy S. Rao/
Primary Examiner, Art Unit 2621
July 26, 2009